[particular] the respective artifact to which [each of] the [one or more] artifact [patterns] pattern corresponds.

60. (Amended) The method of claim 58, wherein each of the one or more artifact patterns is [provided] determined by experiments with perturbations of suspected causative variables of the [particular] respective artifact to which [each of] the [one or more] artifact [patterns] pattern corresponds.

61. (Amended) The method of claim 58, wherein each of the one or more artifact patterns is [provided] determined by a cluster analysis of control biological profiles, the control biological profiles comprising [a plurality of] measurements of a plurality of cellular constituents in experiments wherein the respective artifact to which [each of] the [one or more] artifact pattern corresponds arises.

Q1

62. (Amended) The method of claim 58, wherein [of] the one or more artifact patterns are scaled by scaling coefficients, each of the one or more artifact patterns having [a particular] an independent scaling coefficient.

Sub B2

63. (Amended) The method of claim 62, wherein the scaling coefficients are determined by a method comprising determining the [value of each particular scaling coefficient] values of said scaling coefficients [which minimizes] such that the value of an objective function of the difference between the measured profile and the sum of the one or more scaled artifact patterns is minimized.

64. (Amended) The method of claim 63, wherein the objective function is minimized by a least squares minimization.

Add new claims as follows:

Sub B3

Q2

70. (New) The method of claim 63 or 64, wherein each cellular constituent's contribution to said objective function is weighted by a weighing factor, wherein said weighing factor is selected according to the relative certainty or significance of the measured value of said cellular constituent.

71. (New) A method for removing one or more artifacts from a measured biological profile, said measured biological profile comprising measurements of a plurality of cellular constituents, said method comprising subtracting an artifact template from the measured biological profile, wherein said artifact template is obtained by comparing said measured biological profile to a library of artifact signatures, said artifact signatures corresponding to different levels of severity of artifacts, said comparing comprising pattern matching of said measured profile against said library.

72. (New) A method for removing one or more artifacts from a measured biological profile, said measured biological profile comprising measurements of a plurality of cellular constituents, said method comprising: (a) comparing said measured biological profile to a library of artifact signatures to generate an artifact template, said artifact signatures corresponding to different levels of severity of artifacts, said comparing comprising pattern matching of said measured profile against said library; and (b) subtracting said artifact template from said measured biological profile, thereby removing said one or more artifacts from said measured biological profile.

Q2

73. (New) The method of claim 71 or 72, wherein said comparing comprises minimizing an objective function of the difference between said measured profile and said library of artifact signatures.

74. (New) The method of claim 73, wherein said objective function is minimized by a least squares minimization.

75. (New) The method of claim 73, wherein each cellular constituent's contribution to said objective function is weighted by a weighing factor, wherein said weighing factor is selected according to the relative certainty or significance of the measured value of said cellular constituent.

76. (New) The method of claim 74, wherein each cellular constituent's contribution to said objective function is weighted by a weighing factor, wherein said weighing factor is